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with descriptions of new species (Lepidoptera:Oecophoridae).

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# RESTRICTION OF GONIONOTA MELOBAPHES WALSINGHAM WITH DESCRIPTIONS OF NEW SPECIES (LEPIDOPTERA: OECOPHORIDAE)

*By* J. F. GATES CLARKE

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# NEOTROPICAL MICROLEPIDOPTERA, III

# RESTRICTION OF GONIONOTA MELOBAPHES WALSINGHAM WITH DESCRIPTIONS OF NEW SPECIES (LEPIDOPTERA: OECOPHORIDAE)

By J. F. Gates Clarke

Since the description of *Gonionota melobaphes* Walsingham, a considerable number of species of small moths has been placed under that name in collections and, indeed, it seems entirely likely that Walsingham's original series consisted of several species. Larger series from widespread localities indicate that *melobaphes* is actually confined to a relatively small geographical area and that other similarly colored species of this complex are likewise restricted in their ranges.

In the U.S. National Museum there are specimens, determined as *melobaphes* by Durrant and Meyrick, which are not referable to Walsingham's species; moreover, Meyrick suppressed his own *vexillata* in favor of *melobaphes*, yet *vexillata* is one of the most distinct species of the group. All of these taxa need reconsideration.

In treating these and other South American forms, Meyrick placed all of them in the European genus *Hypercallia* Stephens. *Hypercallia* Stephens is based on *Phalaena tortrix christiernana* Linnaeus, a synonym of *H. citrinalis* (Scopoli), which is abundantly distinct from any

of the South American species, and none of the latter are referable to *Hypercallia*.

The genus *Gonionota* was proposed by Zeller [1] for *G. notodontella* Zeller.

Meyrick [2] recognized the genus and stated: "I give the characters of this genus, which was incompletely described by Zeller, who regarded it as a group of *Hypercallia*, from which it is in fact very distinct. . . ." Later, in the same paragraph, he stated: "I am informed by Mr. Busck that the typical species of *Gonionota*, *G. notodontella*, Zell., has vein 9 of fore-wings rising from the stalk of 7 and 8. . . ." Walsingham [3] has pointed out: "Some error has occurred here—the neuration of the Type of *Gonionota notodontella* Z. is: FW: 12 veins; 7–8 stalked, 7 to termen; 9 and other veins separate; 2 twice as remote from 3 as 3 is from 4. HW: 8 veins; 3–4 connate; 5–7 parallel.—Drnt." Obviously Busck was not familiar with *notodontella* (there are no specimens in the U.S. National Museum) because he would not have overlooked such a clear character as the relation of vein 9 in the forewing to 7 and 8. In 1922 [4] Meyrick suppressed *Gonionota* in favor of *Hypercallia* and placed all the species of this group in the latter genus.

*Gonionota* is a distinct genus, as pointed out by Meyrick in 1909, and may be distinguished from *Hypercallia* by the upturned palpus, the third segment roughened posteriorly, the pubescent or short-ciliated antenna of the male, the smooth antenna of the female, the bifurcate uncus, and the presence of a clasper or other ornamentation on the harpe. *Gonionota* is most nearly related to the South American genus *Coptotelia*, from which it is distinguished by the strong posterior thoracic scale-tuft, by vein 9 of the forewing being widely separated from the stalk of 7 and 8, and by the termen being convex. In the hind wing, veins 3 and 4 are usually connate, but all species provide examples with veins 3 and 4 stalked.

### *Gonionota melobaphes* Walsingham

FIGURE 1; PLATES 1 (FIG. 6), 2 (FIG. 1)

*Gonionota melobaphes* Walsingham, 1912, *in* Godman and Salvin, Biologia Centrali-Americana, vol. 42 (Lepidoptera-Heterocera, vol. 4), p. 129, pl. 4, fig. 27.—Amsel, 1956, Bol. Ent. Venezolana, vol. 10 (nos. 1 and 2), p. 294, pl. 64 (fig. 5), pl. 108 (fig. 10).

*Hypercallia melobaphes* (Walsingham), Meyrick, 1922, *in* Wytsman, Genera insectorum, fasc. 180, p. 162, no. 22; 1926, Exotic Microlepidoptera, vol. 3, p. 314; 1930, Ann. Naturhist. Mus. Wien, vol. 44, p. 233.—Gaede, 1939, *in* Bryk, Lepidopterorum catalogus, part 92, p. 261.

[1] 1877, Hor. Soc. Ent. Ross., vol. 13, p. 379.

[2] 1909, Trans. Ent. Soc. London, 1909, p. 24.

[3] 1912, *in* Godman and Salvin, Biologia Centrali-Americana, vol. 42 (Lepidoptera-Heterocera, vol. 4), p. 128.

[4] 1922, *in* Wytsman, Genera insectorum, fasc. 180, p. 161.

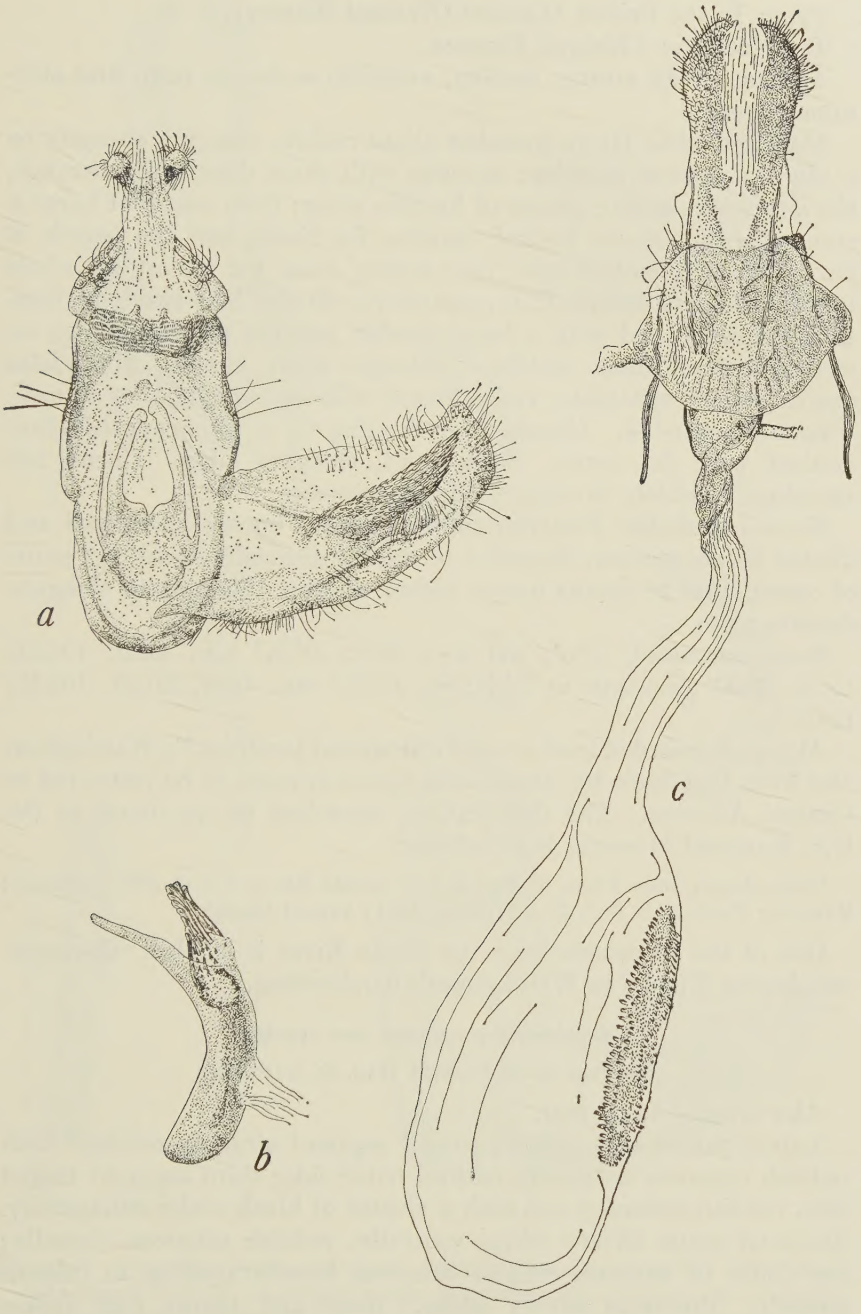


FIGURE 1.—*Gonionota melobaphes* Walsingham: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, ventral view of female genitalia.

Type: In the British Museum (Natural History).

Type locality: Chiriqui, Panama.

Abdomen with strong, median, eversible scale-tuft from first sternum of male.

Male genitalia: Harpe broadest about middle, tapering abruptly to a bluntly pointed cucullus; sacculus with short distal protuberance, the latter with strong cluster of hairlike setae; from center of harpe a stout clasper extends toward cucullus for about half the length of harpe; clasper clothed with very strong setae for almost its whole length. Anellus subquadrate, posteriorly divided into two long, digitate processes, and with a long, slender, pointed process arising on each side from about middle. Aedeagus stout, curved, with distal end depressed, spatulate; vesica armed with strong cluster of cornuti. Vinculum rounded. Gnathos terminating in a wide, curved plate clothed with fine setae. Socii small, elongate lobes. Uncus terminating in widely divergent curved processes.

Female genitalia: Posterior third of ductus bursae sclerotized and dilated before ostium; inception of ductus seminalis dorsal, at point of constriction of ductus bursae before ostium. Signum an elongate dentate plate.

Slides examined: ♂♂, AB 25.ii.1920; JFGC nos. 4232, 10122, 10123, 5096 (paratype in BM); ♀♀, JFGC nos. 4233, 10125, 10126, 10127.

Although recorded from several widespread localities by Walsingham and from Venezuela by Amsel, *melobaphes* appears to be restricted to Central America. The distribution, according to specimens in the U.S. National Museum, is as follows:

Costa Rica: Juan Vinas, 3 ♂♂, 2 ♀♀; Sixola River, 3 ♀♀ (Wm. Schaus); Panama: Cabima, 3 ♂♂, 2 ♀♀ (May, 1911; August Busck).

One of the specimens from the Sixola River is labeled "*Gonionota melobaphes* Wlsm." in Walsingham's handwriting.

### *Gonionota contrasta*, new species

Figures 2*a–d*; Plate 1 (Fig. 4), 2 (Fig. 2)

Alar expanse 19–21 mm.

Labial palpus buff yellow; second segment strongly overlaid with reddish ocherous anteriorly and on outer side; third segment tinged with reddish ocherous and with a cluster of black scales subapically. Antennal scape silvery white ventrally, reddish ocherous dorsally; remainder of antenna reddish ocherous basally shading to fuscous apically. Proboscis silvery white. Head and thorax buff yellow heavily overlaid with reddish ocherous; posterior thoracic tuft tipped fuscous. Forewing ground color sayal brown blotched and suffused with fuscous; from base of wing broad, elongate, oblique reddish

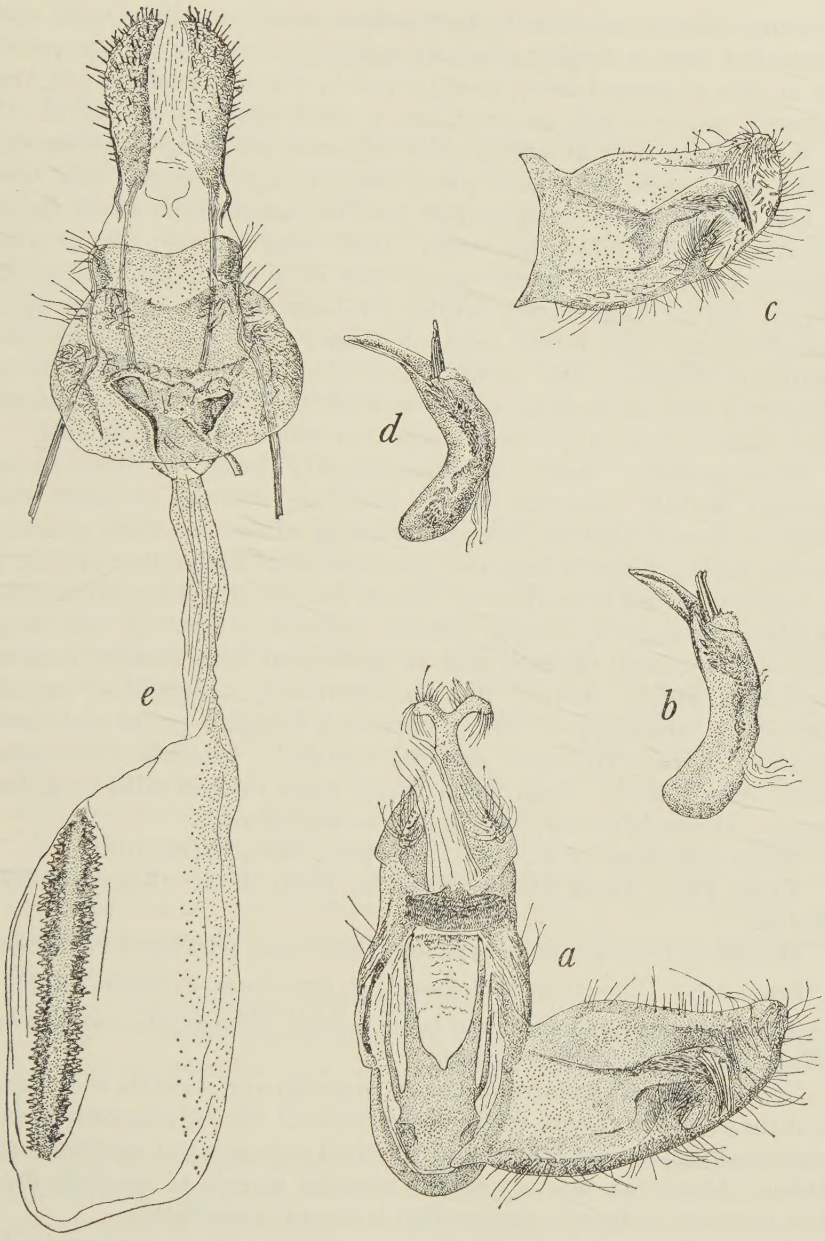


FIGURE 2.—*Gonionota contrasta*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, right harpe of second specimen to show variation; *d*, aedeagus of second specimen. *Gonionota dissita*, new species: *e*, ventral view of female genitalia.

ocherous blotch, mixed with buff yellow, nearly reaching costa and separated from a smaller similarly colored outwardly oblique patch by an arm of ground color; in outer patch, which extends to cell, two blackish spots; in cell, at two-fifths, a black spot and at end of cell a small white dot; at apical third of costa an elongate triangular white spot edged with pink along inner margin; beyond this spot a few whitish scales; cilia grayish fuscous except those along apical third white with faint pink tinge. Hind wing fuscous; cilia grayish fuscous except those around apical half of wing tipped with pink-tinged white. Legs silvery white; forefemur brown on inner side; foretibia and first tarsal segment tinged with reddish ocherous; midtibia blotched with brown; hind tibia tinged ocherous white. Abdomen fuscous dorsally, white ventrally; anal tuft with violaceous tint; first sternum with strong, median, eversible scale tuft in male.

Male genitalia: Harpe broadest slightly before middle, costal margin slightly excavate before cucullus; saccular margin with slightly curved digitate process extending about one-third distance across harpe; clasper a long arm from middle of harpe, terminating in a cluster of strong setae directed toward and reaching saccular margin. Anellus rectangular, deeply incised posteriorly forming two long, pointed processes; on each side an additional long, slender process. Aedeagus stout, curved, distally depressed, tonguelike; cornuti numerous, consisting of closely appressed elongate group and stout dentate series. Vinculum narrow, rounded. Gnathos transverse, oval, spined knob. Socii small fleshy lobes clothed with long fine setae. Uncus bifurcate, base as long as lateral arms.

Slides examined: ♂♂, JFGC nos. 4630, 5098, 10116, 10121.

Type: Peru, Tingo Maria (Nov. 25, 1949, H. A. Allard), USNM 66373.

Described from the male type and three male paratypes as follows:

PERU: 2♂♂, Callao (Mrs. M. J. Pusey); ♂, Chanchamayo (Dognin Coll.).

The Chanchamayo specimen bears a label "*Hypercallia melobaphes* Wals." in Meyrick's handwriting.

The superficial similarity between *contrasta* and *vexillata* is striking, but the genitalia at once distinguish the two. The anellus of *contrasta* exhibits long, slender lateral and terminal processes but *vexillata* lacks them. Moreover, midway on the saccular margin of *contrasta* there is a pronounced digitate process that is absent in *vexillata*.

The anellus and aedeagus of *contrasta* place it nearer *melobaphes* than to any other species of this group but the digitate saccular process of *contrasta*, absent in *melobaphes*, and the arrangement of the cornuti immediately distinguish the two.

Females of *contrasta* and *vexillata* are unknown and no comparison with *melobaphes* can be made.

***Gonionota dissita*, new species**

FIGURE 2*e*; PLATE 3 (FIG. 5)

Alar expanse 20–22 mm.

Labial palpus missing. Antennal scape reddish ocherous dorsally, silvery white ventrally; remainder of antenna buff yellow proximally shading to brownish distally. Head and thorax buff yellow, the former with sparse, scattered reddish ocherous scales, the latter with abundant reddish ocherous scaling; posterior tuft brown. Forewing ground color brown, blotched dorsally with fuscous; base, to two-fifths of costa and dorsal fourth, buff yellow strongly mixed with reddish ocherous; outer margin of basal patch irregularly oblique, costal margin shaded with brown; from costal two-fifths an oblique, narrow blotch, the same color as basal patch, extends to end of cell and terminates in a small white dot; basal and outer light areas separated by an arm of ground color; in cell, at about two-fifths, a fuscous spot; from costa to tornus, at about outer fifth, an indistinct row of fuscous spots parallel to termen; at apical fourth, on costa, a prominent, narrow triangular white streak bordered on its inner margin with reddish ocherous and followed by white scaling to apex; cilia brown except those in apical third tipped white. Hind wings brownish but much paler basally; cilia ocherous white shaded brownish around apex. Legs silvery white; forefemur overlaid with brownish on outer side; foretibia and first tarsal segment reddish ocherous on outer side; midfemur and tibia shaded with pale brown on outer side. Abdomen brownish dorsally, white ventrally.

Female genitalia: Ostium broad, opening into broadly funicular sclerotized posterior portion of ductus bursae; inception of ductus seminalis dorsal, approximately at junction of membranous and sclerotized parts of ductus bursae. Signum a long, slender, sclerotized, dentate plate.

Slides examined: ♀♀, JFGC nos. 4235, 11104.

Type: Trinidad, Port of Spain (no date, F. W. Urich), USNM 66372.

Described from the type and one female paratype as follows:

TRINIDAD: ♀, "Mt. St. B." (Bro. Maur, 1923).

Under *determinata* I have discussed the apparent relationships of this species. In *dissita* the basal patch is bordered outwardly by a less irregular margin than the other species, and the basal patch is separated from the costal blotch by a broad triangular arm of ground color.

Unfortunately, both specimens from which this species is described are damaged, but the species is distinct and is the basis for the first record of this group from the West Indies.

***Gonionota determinata*, new species**

FIGURE 3; PLATES 1 (FIG. 5), 2 (FIG. 3)

Alar expanse 19–27 mm.

Labial palpus bright buff yellow; second segment strongly suffused with brown anteriorly and laterally, with considerable reddish ocherous scaling on outer side; third segment edged with reddish ocherous anteriorly and with a few black scales subapically on inner side. Antennal scape reddish ocherous dorsally, silvery white ventrally; remainder of antenna reddish ocherous proximally shading to fuscous distally. Head and thorax bright buff yellow mixed with reddish ocherous; posterior tuft brown. Ground color brown blotched and suffused with fuscous; basal patch buff yellow to costal two-fifths, heavily overlaid with reddish ocherous in females and divided near middle by an angulate line of ground color; costal edge of basal patch broadly brown in female and narrowly edged with fuscous in male; beyond basal patch, and separated from it by an arm of ground color, an outwardly oblique buff yellow blotch reaching vein three; beyond this outer blotch subcostally a few scattered black scales; in cell at two-fifths a fuscous spot; at end of cell a white dot bordered outwardly by a few fuscous scales; at apical third of costa a narrow white dash bordered inwardly with reddish ocherous and followed on costa by a few white scales; apical fourth of wing lightly streaked with gray scales; cilia brown apically deepening to leaden gray around termen to tornus. Hind wing brownish ocherous in female, considerably lighter in male, with conspicuous brown or fuscous scaling in anal area; cilia leaden gray apically becoming lighter toward anal section. Legs silvery white; forefemur suffused brownish on outer side; foretibia and first tarsal segment overlaid reddish ocherous; midtibia and tarsi suffused brownish and tibia with some reddish ocherous; posterior tibia and tarsi lightly shaded with brownish. Abdomen ocherous white ventrally, brown dorsally; from first sternum a strong eversible scaletuft in male.

Male genitalia: Harpe broadest about middle, then tapering somewhat abruptly to a bluntly pointed cucullus; sacculus bearing a small triangular protuberance; clasper a moderately long arm from middle of harpe terminating in cluster of rather short stout setae directed toward sacculus. Anellus subrectangular, deeply cleft posteriorly forming two long, narrow, divergent arms; from each side of anellus a long, curved, pointed process. Aedeagus stout, curved, tonguelike distally; vesica armed with a narrow band of strong cornuti. Vinculum narrow, rounded. Gnathos a transverse oval knob. Socii small, fleshy lobes sparsely clothed with fine setae. Uncus furcate, rather thick basally.

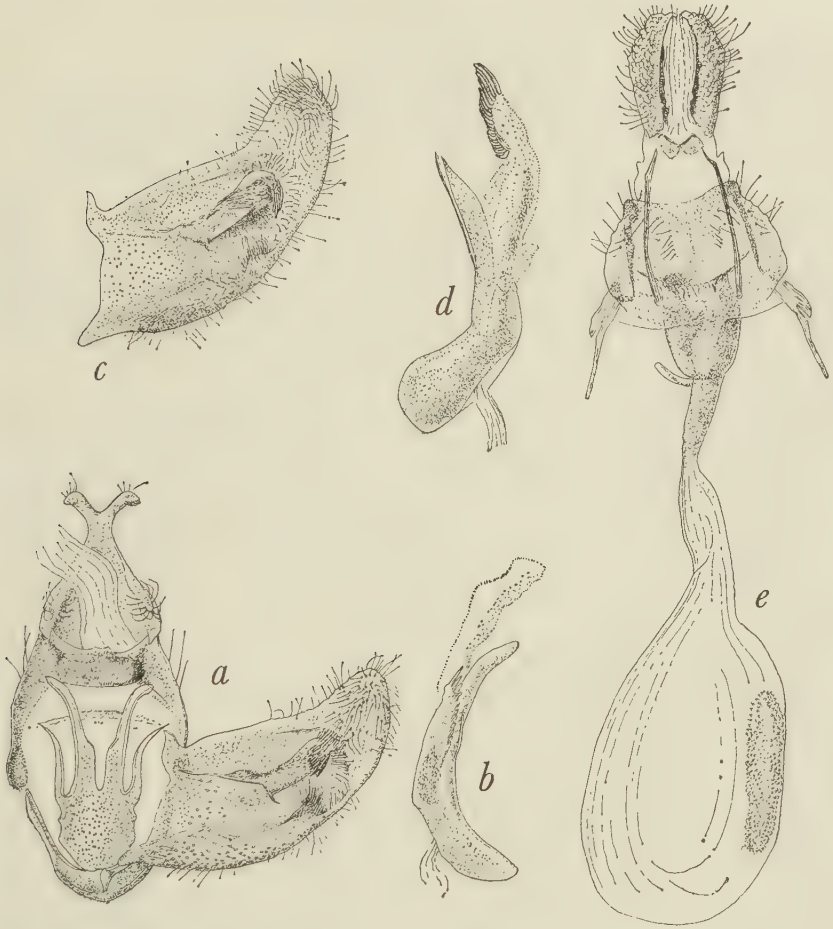


FIGURE 3.—*Gonionota determinata*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus; *c*, right harpe of second specimen illustrating variation; *d*, aedeagus of second specimen; *e*, ventral view of female genitalia.

Female genitalia: Posterior half of ductus bursae sclerotized, dilated before ostium; inception of ductus seminalis dorsal and anterior to dilated portion of ductus bursae. Signum an elongate dentate plate.

Slides examined: ♂♂, JFGC nos. 5096, 10128; ♀♀, JFGC nos. 4234, 10120.

Type: British Guiana, Mallali (no date or collector), USNM 66374. There is a white label attached to this specimen bearing the inscription "*Hypercallia melobaphes* Wals." in Meyrick's handwriting.

Described from male type, one male and four female paratypes as follows:

VENEZUELA: ♂, Aroa (Schaus, 1895) [this specimen was paratype ♂ 6444 of *Gonionota melobaphes* Walsingham]; 4 ♀ ♀, Valera (no date, E. P. deBellard).

In the males of this species the coloring appears to be generally lighter than in the females.

The five species *melobaphes, contrasta, dissita, incontigua,* and *determinata* form a group with similar pattern and coloration, and with genitalia of the same general type. On superficial appearance the five can easily be confused, especially if the specimens are worn. The genitalia, however, exhibit excellent points of distinction. Both *contrasta* and *determinata* have a saccular process, but that of *contrasta* is about three times as long as that of *determinata; melobaphes* lacks this process; the males of *dissita* and *incontigua* are unknown. The claspers of *contrasta* and *determinata* are similar but the terminal setae of *determinata* are short and do not attain the saccular margin as they do in *contrasta.* The aedeagi of all three show a very definite relationship, but all differ as may be seen from a comparison of the figures. The females (that of *contrasta* unknown) also show close relationship in this group. All have the same type of signum although the length varies. The details of the posterior part of the ductus bursae differ and perhaps give the only reliable characters in the females for distinguishing the species. In *dissita* the sclerotized part of the ductus is short and funicular; in *determinata* and *melobaphes* it is rather long and the ostium opens into a deep cuplike section; the signum of *determinata* is much shorter (about three-fifths) than that of *melobaphes, incontigua,* and *dissita* and is not so heavily sclerotized. In *incontigua* the sclerotized portion of the ductus bursae is very short and broad in marked contrast to the other species.

### *Gonionota bourquini,* new species

FIGURE 4; PLATE 2 (FIGS. 4, 5)

*Hypercallia melobaphes* (Walsingham) Bourquin, not Walsingham, 1945, De Acta Zool. Lilloana, vol. 3, p. 135, figs. 1, 2, 1 pl.

Alar expanse 16–24 mm.

Labial palpus pale maize yellow; second segment pale brown on anterior edge shading to reddish ocherous laterally; at apex and on outer side a few carmine scales mixed, and with a jet black spot slightly below apex on outer side. Antenna pale maize yellow shading to fuscous distally, basally strongly overlaid with reddish ocherous; scape silvery white beneath, reddish ocherous above. Proboscis silvery white. Head and thorax darker yellow than palpus with strong mixture of carmine scales; tegula sometimes sparsely irrorate with

FIGURE 4.—*Gonionota bourquini*, new species: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus with five cornuti; *c*, right harpe, variation; *d*, aedeagus with three cornuti; *e*, right harpe of third variation; *f*, aedeagus with four cornuti; *g*, ventral view of female genitalia.

black scales; anterodorsally a black spot near edge of tegula; posterior tuft fuscous. Forewing ground color light brown with slight pinkish cast and with some ill-defined fuscous blotches; base of forewing buff yellow, outer edge lobed obliquely to costa at one-third; an outwardly oblique blotch of the same color separated from basal patch by an arm of the ground color; costal edge of light basal patch brownish ocherous; basal patch and costal blotch overlaid with reddish ocherous and sparsely irrorate with scattered jet black scales; outer third of costa broadly edged with white, pink, and fuscous scales intermixed; at end of cell a tiny white spot; around termen a series of blackish spots; cilia fuscous. Hind wing buff to ocherous fuscous, veins outlined darker; anal area with darker scaling parallel to first anal vein; cilia concolorous with hind wing but with some darker scales mixed. Legs silvery white; femur and tibia of foreleg strongly overlaid reddish ocherous; midtibia overlaid ocherous and hind tibia faintly ocherous dorsally.

Abdomen fuscous dorsally, silvery white ventrally, latter with slight buff tinge posteriorly; first sternum with strong, median, eversible scale-tuft in male.

Male genitalia: Harpe widest before middle, gently tapered to the bluntly rounded cucullus; from base of harpe a broadly sclerotized area extending almost to sacculus before middle and terminating in a small pointed process; at middle of the sclerotized area, and arising from it, there is a short, high ridge; from this ridge to costa, and beyond base of harpe, there is a sclerotized subrectangular extension. Anellus rectangular, slightly convex laterally. Aedeagus broadly U-shaped, stout, terminating in a point bent dorsad; vesica armed with three to five stout cornuti. Vinculum with well-developed dorsoanterior process. Gnathos broad, transverse. Socii small hairy lobes. Arms of uncus long, rather stout, somewhat dilated distally, connate at base.

It should be noted that there is considerable variation in the harpes and in the more strongly sclerotized areas of the inner surfaces; but I do not believe that these apparent differences are specific.

Female genitalia: Posterior third of ductus bursae strongly sclerotized. Inception of ductus seminalis dorsal, well before ostium. Signum a rather small dentate, elongate-ovate plate.

Slides examined: ♂♂, JFGC nos. 4217, 4227, 4230, 5097, 6929, 10117, 10131, 10132; ♀♀, JFGC nos. 4218, 4219, 4231, 6931.

Type: Brazil, New Bremen (Oct. 5, 1936, Fritz Hoffmann), USNM 66371.

Described from the male type, 40 male and 4 female paratypes as follows:

Argentina: 26 ♂♂, 2 ♀♀, La Tacuarita, Tigre (II.1932 and III.1947, Fernando Bourquin); Brazil: 7 ♂♂, Nova Teutonia (V.1938, IV to 30.VIII.

PLATE 1.—1, *Gonionota extima*, new species; 2, *Gonionota excavata*, new species; 3, *Gonionota fimbriata*, new species; 4, *Gonionota contrasta*, new species; 5, *Gonionota determinata*, new species; 6, *Gonionota melobaphes* Walsingham.

PLATE 2.—1, *Gonionota melobaphes* Walsingham; 2, *Gonionota contrasta*, new species; 3, *Gonionota determinata*, new species; 4, *Gonionota bourquini*, new species; 5, *Gonionota bourquini*, new species (dark winged form); 6, *Gonionota incontigua*, new species.

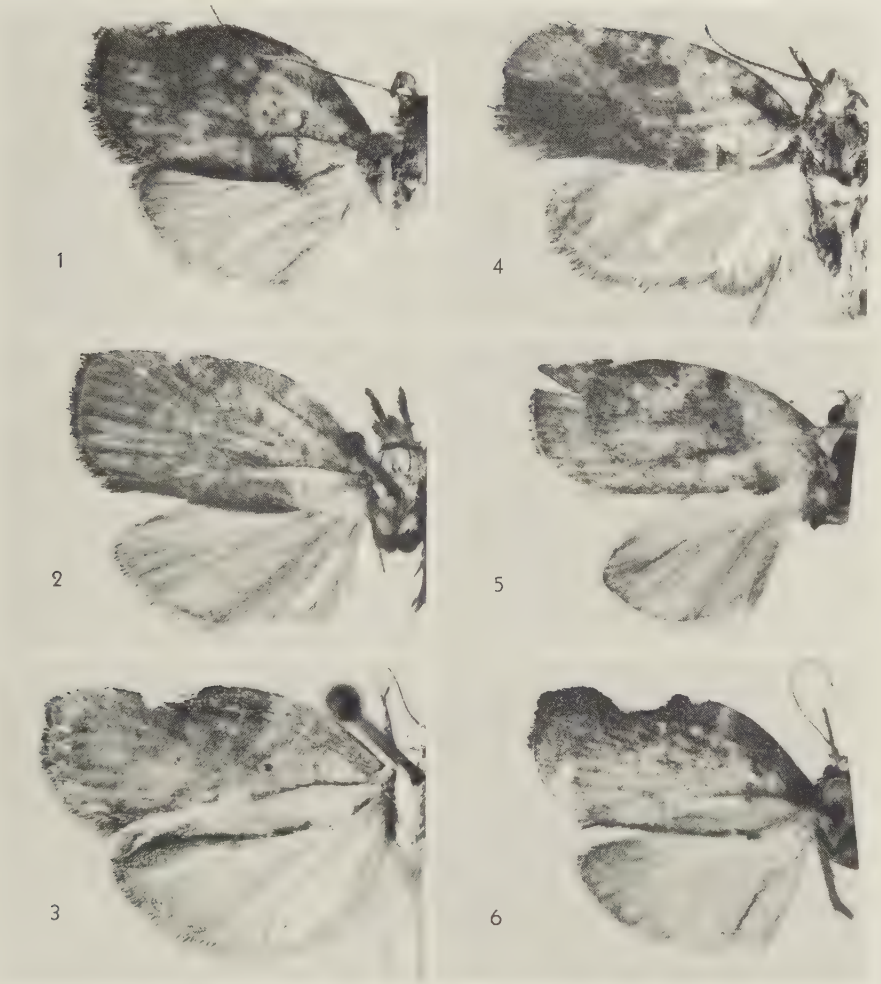


PLATE 3.—1, *Gonionota fimbriata*, new species; 2, *Gonionota extima*, new species; 3, *Gonionota excavata*, new species; 4, *Gonionota periphereia*, new species; 5, *Gonionota dissita*, new species; 6, *Gonionota hyptiotes*, new species.

1948; one with no date, Fritz Plaumann); 3 ♂♂, ♀, New Bremen (V–XI.1936, I.1937, Fritz Hoffmann); 4 ♂♂, ♀, Santa Catarina (VI.1935, V.1936, Fritz Hoffmann).

This is the species treated by Fernando Bourquin in De Acta Zoologica Lilloana, in which he described the life history and figured the larva, pupa, and adult. He also illustrated an example of the damage caused by the larva. Bourquin's use of the name "*Hypercallia melobaphes*" was based on a misdetermination by Meyrick.

Because of the considerable intraspecific variation exhibited by the genitalia, as well as exhibited superficially it is not surprising that the species was misdetermined. In the long series before me there is variation in the intensity of the color of the forewings, although the pattern appears to be constant, and in some specimens, regardless of locality, the hindwings are as dark as those of *vexillata*. In the males the number of cornuti varies from three to five but there is no suggestion that this variation reflects the locality. The signa also vary to some extent but this also is not connected with locality. I am unable to separate the various color forms.

I am pleased to name this species for my friend Fernando Bourquin, who has contributed so much to our knowledge of the life histories of Argentine Microlepidoptera.

### *Gonionota vexillata* (Meyrick)

*Coptotelia vexillata* Meyrick, 1913, Trans. Ent. Soc. London, 1913, p. 179.

*Hypercallia vexillata* (Meyrick), 1922, *in* Wytsman, Genera insectorum, fasc. 180, p. 163, no. 42; 1930, Ann. Naturhist. Mus. Wien, vol. 44, p. 233 (as synonym of *melobaphes*).

*Hypercallia melobaphes vexillata* (Meyrick), 1926, Exotic Microlepidoptera, vol. 3, p. 314.—Gaede, 1939, *in* Bryk, Lepidopterorum catalogus, part 92, p. 261.

*Gonionota vexillata* (Meyrick), Clarke, 1963, Catalogue of the type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick, vol. 4, p. 246, pl. 120, figs. 3–3*b*.

Meyrick described this species from two males and accorded it full specific rank. In 1926 he wrote, under *Hypercallia melobaphes* Walsingham: "I find . . . that *vexillata* Meyr. should be regarded as a mountain form of this." The dark hind wing and genitalia readily distinguish *vexillata* from *melobaphes*, and I have raised *vexillata* to its appropriate specific status (Clarke, 1963).

The abundant differences between the male genitalia of *melobaphes* and *vexillata* are revealed by a comparison of figure 1*a* of this paper with that of figure 3*b*, plate 120, in the Meyrick work cited above. The anellus of *melobaphes* has four pointed processes but that of *vexillata* has none; the anellus of *vexillata* is similar to that of *bourquini*. The clasper of *vexillata* is naked for most of its length and terminates in a cluster of thick, long setae, sharply turned back toward the base

of the harpe. The clasper of *melobaphes* is nearly straight, stout, and clothed for almost its entire length by short setae.

### *Gonionota incontigua*, new species

FIGURE 5*a*; PLATE 2 (FIG. 6)

Alar expanse 26 mm.

Labial palpus yellow; basal half of second segment white posteriorly; anterior edge brown shading to reddish ocherous laterally, with some blackish scaling on outer side and at apex; third segment edged narrowly reddish ocherous anteriorly; rather dense black scaling subapically and apex white. Antennal scape reddish ocherous mixed with a few blackish scales dorsally, white ventrally; remainder of both antennae missing. Proboscis white, slightly infuscated. Head yellow mixed with reddish ocherous. Thorax buff yellow mixed with reddish ocherous and some pale fuscous scales; posterior tuft fuscous. Forewing ground color brown strongly suffused with fuscous; basal patch buff yellow mixed with reddish ocherous and with several small groups of fuscous scales; costal edge of basal patch brown; from costa, beyond basal patch and separated from it by a band of ground color, an outwardly oblique buff yellow and reddish ocherous blotch extends to end of cell, where it terminates in a white spot; surface of blotch marked with considerable fuscous scaling; in cell, beyond edge of basal patch, a fuscous spot; dorsum strongly suffused fuscous; at apical third of costa a narrow triangular white dash followed on apical part of costa by white scaling; costal dash edged inwardly reddish ocherous; subterminally, grayish scales form ill-defined streaks and spots; cilia grayish fuscous, those near apex tipped whitish. Hind wing ocherous shading to brownish apically; cilia pale grayish ocherous, darker apically; apical cilia whitish tipped. Legs silvery white; forefemur brown outwardly; foretibia and first tarsal segment reddish ocherous on outer side; midtibia lightly marked dull ocherous on outer side; posterior tibia dull ocherous white. Abdomen brownish dorsally, whitish ventrally.

Female genitalia: Ostium crescentic opening into a broad, short, sclerotized posterior section of ductus bursae; inception of ductus seminalis dorsal, at anterior edge of sclerotized part of ductus bursae. Signum an elongate, sclerotized dentate plate.

Slide examined: ♀, JFGC no. 10124.

Type: Venezuela, Caracas (no date or collector), USNM 66375.

Described from the unique female type.

Superficially strikingly similar to *melobaphes*, *determinata*, and *bourquini*, but the brilliance of coloring is subdued by abundant fuscous

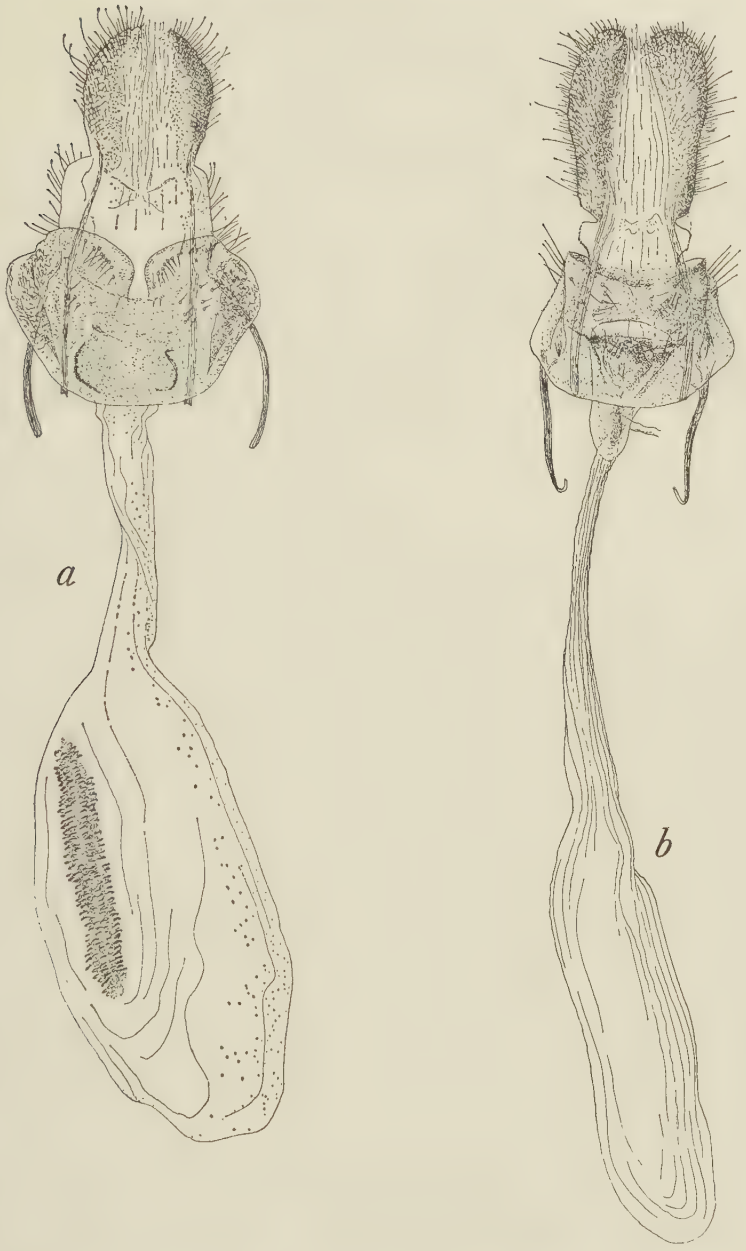


FIGURE 5.—*Gonionota incontigua*, new species: *a*, ventral view of female genitalia. *Gonionota extima*, new species: *b*, ventral view of female genitalia.

irroration. The genitalia, however, provide ample characters to distinguish *incontigua* from its nearest relatives as discussed under *determinata*.

***Gonionota extima*, new species**

FIGURE 5*b*; PLATES 1 (FIG. 1), 3 (FIG. 2)

Alar expanse 22 mm.

Labial palpus sayal brown; second segment irrorate with black on outer side, basal half of posterior edge white; third segment spotted with blackish fuscous subapically and on inner side; apex ocherous white. Antennal scape silvery white ventrally, sayal brown dorsally; remainder of antenna sayal brown shading to fuscous apically. Head sayal brown mixed with some reddish scales anteriorly and ocherous posteriorly. Thorax buff yellow mixed with reddish ocherous; dorsally several black spots; posterior tuft brown; tegula sayal brown basally and sparsely irrorate with black. Forewing ground color sayal brown; basal patch buff yellow mixed with reddish ocherous and irrorate with blackish fuscous, from basal third of costa outwardly oblique to middle of cell, then inwardly oblique to basal fourth of dorsum; costal part of basal patch broadly suffused sayal brown; in basal patch, near outer margin, two black discal spots; at end of cell a white dot followed by a few black scales; fold conspicuously indicated by black scales; dorsum broadly suffused fuscous with purplish tinge; at apical fourth of costa a prominent white triangular spot followed outwardly and obliquely toward termen by a series of irregular, alternating white and blackish spots; cilia fuscous. Hind wing clay color with conspicuous fuscous scaling in anal area; cilia grayish fuscous mixed with ocherous white. Legs silvery white suffused and spotted with sayal brown and grayish fuscous; foretibia and first tarsal segment reddish ocherous on outer side. Abdomen whitish ventrally, brown dorsally.

Female genitalia: Ostium broad, opening into the sclerotized, funicular posterior portion of ductus bursae; inception of ductus seminalis dorsal, at junction of sclerotized and membranous parts of ductus bursae. Signum absent.

Slide examined: ♀, JFGC no. 4236.

Type: Costa Rica, Tuis (May 28–June 4, Wm. Schaus), USNM 66376.

Described from unique female type.

The most characteristic feature of the female is the absence of the signum by which it can be distinguished from all other species of this group.

### *Gonionota incalescens* (Meyrick)

FIGURES 6*a,b*

*Hypercallia incalescens* Meyrick, 1914, Exotic Microlepidoptera, vol. 1, p. 192; 1922, *in* Wytsman, Genera insectorum, fasc. 180, p. 160, no. 41.—Gaede, 1939, *in* Bryk, Lepidopterorum catalogus, part 92, p. 260.

*Gonionota incalescens* (Meyrick), Clarke, 1963, Catalogue of the type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick, vol. 4, p. 237, pl. 115, figs. 1–1*b*.

Meyrick described this species from two males, the only two known. Although the basal patch of forewing is greatly reduced, *incalescens* unquestionably belongs in this group. The small basal patch, the conspicuous white, triangular costal spot, and the genitalia at once distinguish *incalescens* from *melobaphes*.

### *Gonionota periphereia*, new species

FIGURES 6*c,d*; PLATE 3 (FIG. 4)

Alar expanse 20 mm.

Labial palpus russet, the bases of the scales somewhat lighter, producing finely speckled effect; posterior edge of second segment white basally; third segment pale ocherous with a few scattered reddish scales. Antennal scape ocherous white ventrally, russet dorsally; remainder of antenna fuscous with few reddish ocherous scales dorsally. Head and thorax ocherous mixed with reddish ocherous; tegula reddish ocherous basally. Forewing ground color sayal brown shading to russet in apical third; from basal fifth, to about middle of costa, an outwardly oblique band of buff yellow crossed by transverse brown bars and marked with ill-defined reddish ocherous spots; extreme edge of basal third of costa brown; on costa, beyond basal patch, triangular group of black scales; on apical fourth of costa a buff yellow quadrate spot containing some reddish ocherous scales; cilia russet, strongly suffused fuscous from middle of termen to apex. Hind wing ocherous white, somewhat darker toward apex; cilia pale pink, those at apex mixed with gray. Legs ocherous white; forelegs and midlegs overlaid with reddish ocherous and pale ocherous; posterior tibia finely irrorate with pink and gray scales; posterior tarsi light ocherous. Abdomen brownish dorsally, buff tinged with reddish ocherous ventrally; first sternum without strong, eversible scale-tuft; anal tuft dull ocherous.

Male genitalia: Harpe very wide at base, abruptly narrowed beyond middle; saccular and costal margins parallel beyond middle; cucullus truncate; clasper a disc with a whorl of strong setae around its periphery. Anellus subrectangular, about twice as long as broad, narrowed posteriorly. Aedeagus stout, curved; vesica unarmed (at least in type). Vinculum very narrow, rounded. Gnathos a transverse, oval

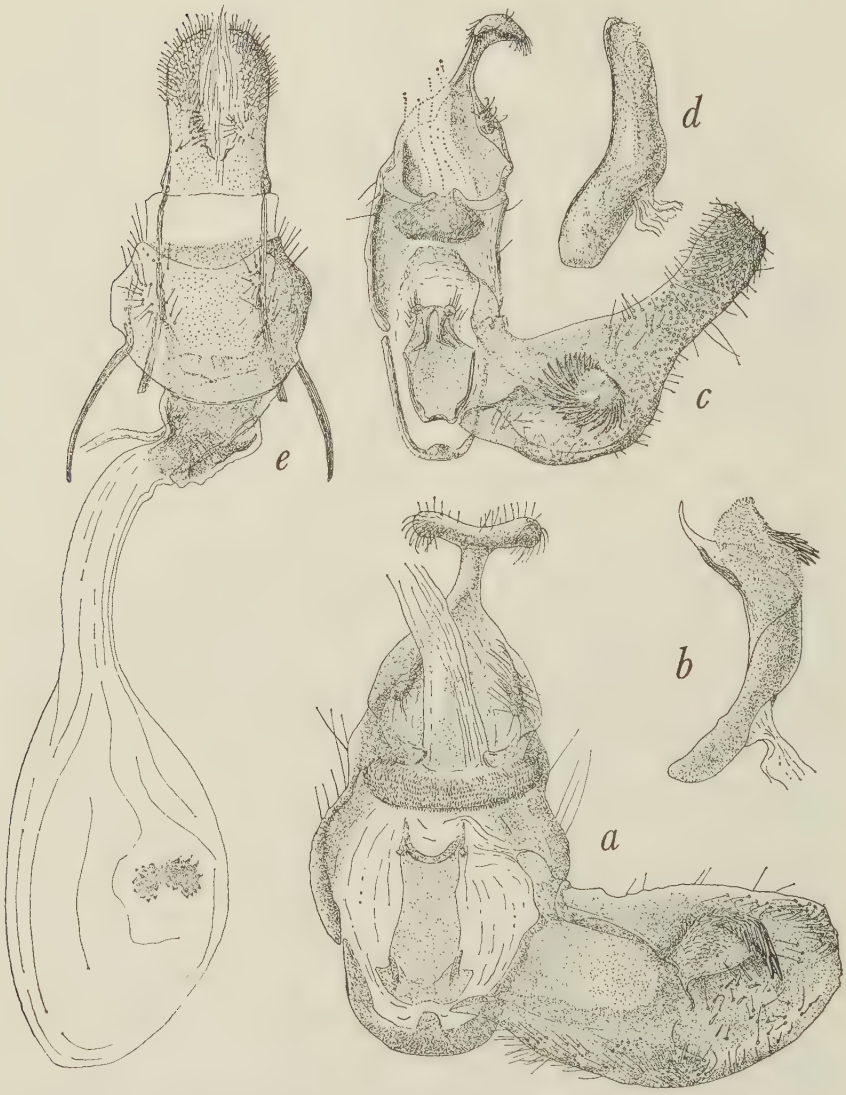


FIGURE 6.—*Gonionota incalescens* (Meyrick): *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus. *Gonionota periphereia*, new species: *c*, ventral view of male genitalia with left harpe and aedeagus removed; *d*, aedeagus. *Gonionota excavata*, new species: *e*, ventral view of female genitalia.

spined knob. Socii small, papillate, clothed with fine setae. Uncus furcate, basal stalk long, slender; divergent distal arms short.

Slide examined: ♂, JFGC no. 11101.

Type: Ecuador, Environs de Loja (no date, Dognin collection), USNM 66377.

Described from unique male type.

This specimen, among others, was sent to Meyrick for determination, presumably by Busck. Attached to it is a note in Meyrick's handwriting which reads: "Sent as second specimen of *H. melobaphes* with ocherous h.w., but is new, I therefore return. h.w. of *melobaphes* vary from ocherous to dark fuscous, but never white." I would not describe the hindwing of this specimen as white but it is certainly lighter than that of any of the other species considered here.

There is some doubt in my mind about placing *periphereia* in *Gonionota*. Although the genitalia are not dissimilar to those of other species associated with *melobaphes* and the venation easily permits its retention here, the fact remains that the labial palpus of *periphereia* differs from those of the other species. Moreover, the third segment is short, about one-third the length of the second, and devoid of any long scaling on the posterior edge. Finally, this is the only species lacking the eversible tuft from the first sternum, but this can, and may, be only a specific character.

### *Gonionota excavata*, new species

FIGURE 6*e*; PLATES 1 (FIG. 2), 3 (FIG. 3)

Alar expanse 22 mm.

Labial palpus ocherous white overlaid with brown, especially on outer side of second segment, sparsely irrorate with fuscous and reddish ocherous; third segment similarly colored, apex whitish. Antenna ocherous white ventrally, grayish fuscous dorsally. Head buff yellow mixed with brown and reddish ocherous. Thorax ocherous mixed with brown; tegula brown basally. Forewing ground color light brown shaded with fuscous costad and with a faint violaceous tinge in tornal area; basal patch buff yellow mixed with reddish ocherous, extending to two-fifths; costal margin of basal patch broadly edged with ground color for nearly its entire length; in cell, at outer edge of basal patch, a blackish spot; several reddish ocherous blotches in center of wing; at apical third costa excised, bordered white; around termen a series of white scale patches preceded by ill-defined fuscous spots; dorsal margin edged with fuscous and with a group of blackish scales at base of dorsum. Hind wing ocherous white shading to brownish ocherous apically; in anal area scattered fuscous scales; cilia grayish fuscous, paler basally. Legs ocherous white lightly infuscated; tarsi white with a few fuscous spots. Abdomen brownish dorsally, ocherous white ventrally.

Female genitalia: Ostium broad, crescentic. Posterior two-fifths of ductus bursae sclerotized and bent anteriorly; inception of ductus seminalis dorsal, near junction of membranous and sclerotized parts of ductus bursae. Signum a small, bilobed, sclerotized dentate plate.

Slide examined: ♀, JFGC no. 4003.

Type: Mexico, Orizaba (no date, Wm. Schaus), USNM 66378.

The structure of the genitalia suggests that *excavata*, *fimbriata* and *hyptiotes* are closely related, but *fimbriata* lacks the excised costa of forewing of the other two. The unusually broad ostium and the signum of *hyptiotes* distinguish it from *excavata*. In superficial appearance *excavata* most nearly resembles *G. rhacina* Walsingham, which, however, lacks the row of white subterminal dashes characteristic of the former species. Also, the hind wing of *excavata* is paler than that of *rhacina*.

***Gonionota hyptiotes*, new species**

FIGURE 7*f*; PLATE 3 (FIG. 6)

Alan expanse 24 mm.

Labial palpus buckthorn brown; outer side of second segment sparsely irrorate with fuscous, inner side with some white scaling and tinged with pink; posterior edge white basally; third segment white posteriorly, subapical tuft fuscous. Antennal scape buckthorn brown dorsally, white ventrally; remainder of antenna brown dorsally shading to grayish fuscous distally. Head and thorax dull ocherous; tegula brownish basally. Forewing ground color buckthorn brown; basal fifth to costal edge of cell at two-fifths dull ocherous; from two-fifths of costa a transverse bar of dull ocherous extends toward outer extremity of basal patch but is interrupted by ground color; basal patch divided at middle by a transverse line of ground color; on outer margin of basal patch, in cell, two small clusters of fuscous scales; at end of cell a fuscous spot surrounded by ocherous; costa deeply excised at outer third, edged with white; inner margin of white edge very narrowly ocherous; costa fuscous before and after white-edged excision; dorsum broadly edged with fuscous; in terminal third scattered, ill-defined fuscous spots; cilia grayish fuscous. Hind wing ocherous white basally, shading to brown apically; in anal area considerable grayish fuscous scaling; cilia ocherous white shading to grayish fuscous around termen to apex. Legs ocherous white irrorate with brown and fuscous. Abdomen ocherous white with sparse fuscous irroration ventrally; dorsally brownish buff.

Female genitalia: Ostium extremely broad, opening into the sclerotized portion of ductus bursae on left side. Ductus bursae very short, sclerotized for about half its length, the sclerotized part dilated and convoluted; inception of ductus seminalis on right side. Signum approximately diamond-shaped.

Slide examined: ♀, JFGC no. 11103.

Type: Mexico, Orizaba (Sept. 10, R. Muller), USNM 66380.

Described from the unique female type.

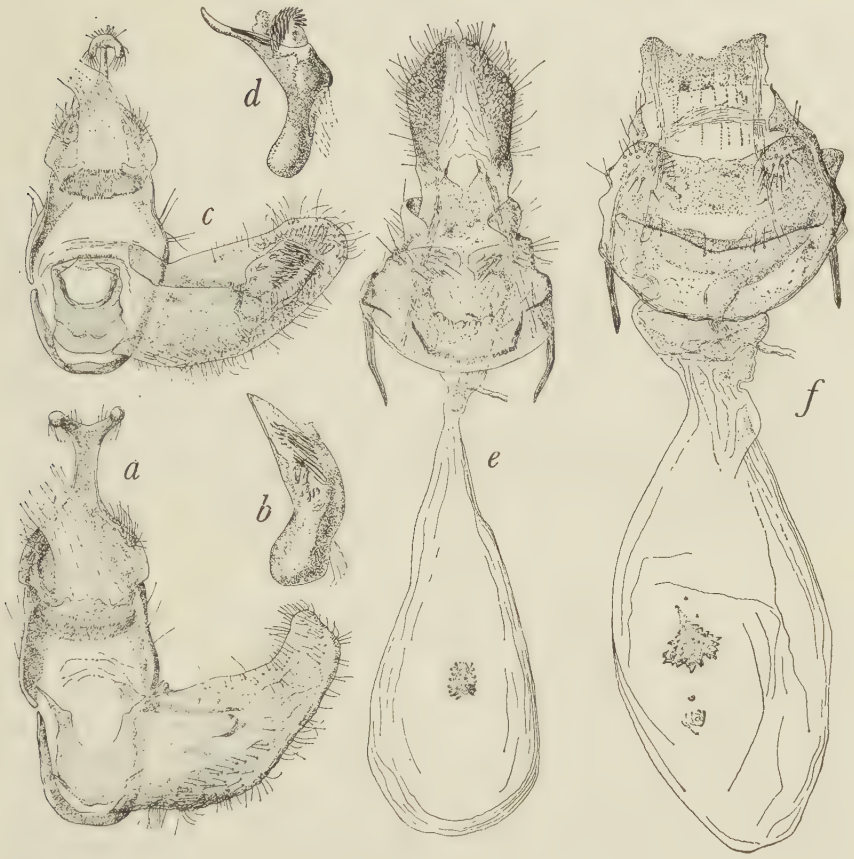


FIGURE 7.—*Gonionota cristata* Walsingham: *a*, ventral view of male genitalia with left harpe and aedeagus removed; *b*, aedeagus. *Gonionota fimbriata*, new species: *c*, ventral view of male genitalia with left harpe and aedeagus removed; *d*, aedeagus; *e*, ventral view of female genitalia. *Gonionota hyptiotes*, new species: *f*, ventral view of female genitalia (ovipositor lobes missing).

In wing shape *hyptiotes* is similar to *excavata*, but the costal excision of the former is deeper than that of the latter. The forewing of *hyptiotes* shows no trace of the white subterminal dashes found in *excavata*, and the reddish ocherous scaling of the forewing of the latter is also lacking in the former. The two can be distinguished further by the genitalia, particularly with respect to the shapes of the signa. The signum of *hyptiotes* is roughly diamond-shaped but that of *excavata* has a definite median constriction.

The type of *hyptiotes* bears a label ("*Goniota* [sic] *incisa* Wlsh."), but there is no indication of who made the determination. Moreover, there is no close relationship between Walsingham's *incisa* and this specimen labeled as that species.

### *Gonionota cristata* Walsingham

FIGURES 7*a,b*

*Gonionota cristata* Walsingham, 1912, *in* Godman and Salvin, Biologia Centrali-Americana, vol. 42 (Lepidoptera-Heterocera, vol. 4), p. 129.

The male genitalia of *cristata* have not been figured previously; they are shown here for comparative reasons.

Slide examined: ♂, JFGC no. 3394. No female available.

Male genitalia: Harpe rather abruptly narrowed in distal half; cucullus truncate; clasper a very small curved ridge about middle of harpe. Anellus subquadrate, deeply excavated on posterior edge. Aedeagus very stout, bent slightly before middle; vesica armed with two groups of strong cornuti, the four or five of the proximal and smaller group short, dentiform, those of the distal group longer and more numerous. Vinculum rather narrow, rounded. Gnathos a narrowly oval spined knob. Uncus with long, slender, proximal stalk and widely divergent, moderately slender distal arms.

### *Gonionota fimbriata*, new species

FIGURES 7*c–e*; PLATES 1 (FIG. 3), 3 (FIG. 1)

Alar expanse 17–21 mm.

Labial palpus amber brown; second segment ocherous white on inner side with pale ocherous toward tip; third segment fuscous on posterior margin subapically; apex white. Antennal scape amber brown dorsally, silvery white ventrally; remainder of antenna amber brown dorsally at base shading to grayish fuscous; dull pale ocherous ventrally. Head russet, the scales narrowly tipped with white; proboscis white. Thorax deep chrome mixed with scattered reddish ocherous scales; anteriorly heavily overlaid with russet; posterior tuft brown; anterior two-thirds of tegula russet. Forewing ground color sayal brown faintly blotched with darker brown, basal patch deep chrome mixed with reddish ocherous and extending to about basal third of wing; outer margin convex; costal edge of basal patch sayal brown and across middle of patch a narrow outwardly curved line of the same color; in cell near outer margin of basal patch two small black spots, one obliquely above the other; at end of cell a few white scales, preceded and followed by scattered fuscous scaling, indicate an outer discal spot; at apical third of costa a conspicuous triangular white dash followed by some white scales; dorsum narrowly edged with fuscous; cilia grayish fuscous, those below apex faintly tipped whitish. Hind wing brownish ocherous, cilia slightly darker. Legs silvery white; forefemur shaded with grayish fuscous on outer side; foretibia and first tarsal segment russet on outer side; midtibia shaded with brown on outer side; midtarsi irrorate brown; posterior tibia and

tarsi shaded with pale brown. Abdomen slightly darker than hind wing, brownish dorsally, white ventrally; anal tuft cinereous mixed with ocherous; first sternum with strong, eversible, median scale-tuft in male.

Male genitalia: Harpe broadest near base, tapering gently to the rounded cucullus; clasper arising slightly beyond middle, stout, distally armed with strong, sharp setae; sacculus thickened but without appreciable prominence. Anellus rectangular, deeply concave posteriorly. Aedeagus stout, curved, sharply pointed; vesica armed with cluster of strong setae. Vinculum narrow, rounded. Gnathos an oval transverse spined knob. Socii small, fleshy lobes clothed with fine setae. Uncus furcate, proximal stalk long, slender; distal arms slender.

Female genitalia: Ostium moderately small, ventral lip ridged, opening into a cup-shaped posterior sclerotized portion of ductus bursae. Inception of ductus seminalis approximately at junction of sclerotized and membranous parts of ductus bursae. Signum a small rectangular dentate plate.

Slides examined: ♂♂, JFGC nos. 3391, 3395, 10791; ♀, JFGC no. 11102.

Type: Panama, Porto Bello (April 1912, August Busck), USNM 66379.

Described from male type, one male and two female paratypes as follows:

PANAMA: Barro Colorado Island (♂, Sept. 1940, James Zetek; 2 ♀♀, 11.x and 3.xi, M. Bates coll.).

Superficially, *fimbriata* and *cristata* are similar, but the hind wing of *cristata* is considerably darker than that of *fimbriata*. In the forewing of *fimbriata* the white costal spot is more pronounced and the ground color is much lighter than in *cristata*. The male genitalia also show marked differences. Although the anneli of both species are of the same type and are, for practical purposes, indistinguishable, the clasper, as in the apical half of the harpe of *fimbriata*, is absent in the harpe of *cristata*. Other obvious differences will be seen by a comparison of the figures. Unfortunately, no female of *cristata* is available for comparison.

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